



Pollution Prevention

JUNE 2005

Military Specification MIL-DTL-64159

Coating, Water
Dispersible Aliphatic
Polyurethane, Chemical
Agent Resistant

Type II WD CARC

NSN 8010-01-493-

-3168 Green 383 3-pt
-3169 Green 383 3-qt
-3170 Green 383 3-gal
-3171 Green 383 15-gal

-3172 Brown 383 3-pt
-3173 Brown 383 3-qt
-3174 Brown 383 3-gal
-3175 Brown 383 15-gal

-3176 Tan 686A 3-pt
-3177 Tan 686A 3-qt
-3179 Tan 686A 3-gal
-3180 Tan 686A 15-gal

-3182 Black 3-pt
-3183 Black 3-pt
-3190 Black 3-gal
-3191 Black 15-gal

-3192 Aircraft Green 3-pt
-3193 Aircraft Green 3-qt
-3194 Aircraft Green 3-gal
-3195 Aircraft Green 15-gal

-3196 Aircraft gray 3-pt
-3197 Aircraft gray 3-qt
-3198 Aircraft gray 3-gal
-3199 Aircraft gray 15-gal

Water Dispersible Primer

NSN 8010-01-

-193-0519 White 1 ¼ -qt
-193-0520 White 1 ¼ -gal
-193-0521 White 5 -gal
-218-0856 Lt Green 1-qt
-218-7354 Lt Green 1-gal

NEW WATER DISPERSIBLE CHEMICAL AGENT RESISTANT COATING (CARC)

Audience

Environmental Management Office Chiefs, Pollution Prevention Managers, Paint Shop Managers, Supply Ordering Managers, and all other personnel that are engaged in CARC painting operations.

Purpose

The intent of this document is to inform individuals about the availability of the new water dispersible (WD) chemical agent resistant coating. This document is meant to be used as a guidance document to help environmental offices and paint shops begin to implement and use the new WD CARC.



Background

CARC is a paint coating used on most tactical military vehicles and equipment. The coating serves two main purposes; camouflage and chemical warfare resistance. The camouflage coating has a flat matte finish that minimizes its visible detection. The chemical resistance protects the military equipment from a chemical attack allowing for easy decontamination of the equipment. Previously, the only available coating was the old CARC paint which was both high in volatile organic compounds (VOCs) and hazardous air pollutants (HAPs). The new WD CARC has zero HAPs and is very low in VOCs, less than 1.8 pounds per gallon. The new WD CARC comes in two types, I and

II, but for this document the focus will be on type II, as it is the superior product in both environmental and performance ratings. All further information in this document will be referring to the Type II WD CARC, hereinafter, referred to as the new WD CARC. The lesser desirable Type I is still available on the Qualified Products List (QPL).



The old CARC was mixed using a solution of highly toxic solvent-based thinners that contained hazardous air pollutants such as methyl isobutyl ketone, toluene, and xylene, which increased air pollution and the safety risks of paint shop workers. The new less toxic WD CARC is a natural solution, which uses safe and inexpensive distilled water as its thinner.

Not only is the new WD CARC better for the environment and safer for the worker, but it also performs better in the painting process due to its new improved formula. The new WD CARC formula is also superior in performance, as it has enhanced flexibility, mar resistance, and weathering durability. These combinations of enhancements provide an extended life for the coating compared to the old CARC. New WD CARC is expected to last up to 9 years between paintings versus only 6 with the old CARC.

Manufactures Address Listings

Hentzen Coatings, Inc.
6937 W. Mill Road
Milwaukee, WI
53218-1225
Tel: (414) 353-4200

NCP Coating Inc.
P.O. Box 307
225 Fort Street Niles, MI
49120-0307
Tel: 1-800-627-1948 or
(616) 683-3377

The Sherwin-Williams Co.
A.W. Steudel Technical
Ctr., Research Lab
Mark J. Wytiaz (POC)
549 East 115th Street
Chicago, IL 60628
Tel: (773) 821-3196
Fax: (773) 821-3037

The Sherwin-Williams Co.
630 East 13th Street
Andover, KS 67002-9314
Tel: (316) 733-1361 x: 131
Fax: (316) 733-442-

Spectrum Coatings, Inc.
217 Chapman Street
Providence RI
02905-4507
Tel: (401) 781-1075

USAG Heidelberg Environmental Management Division

IMEU-HEI-PWE
UNIT 29237
APO AE 09102

Questions or Comments, Please Contact:

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Current Situation

The new WD CARC is already being utilized at several installations across the United States. Fort Campbell, Kentucky is one of the installations that pioneered the new WD CARC's usage, having switched over in 2001. New WD CARC has been tested in different conditions and has been proven effective in several different trials. To prove that the new WD CARC could perform effectively in different climates, performance tests were performed at three different locations in the US with varying climates. These installations are: Barstow Marine Corps Multi Commodity Maintenance Center, CA; Ogden Air Logistics Center, UT; and Tobyhanna Army Depot, PA. Through these onsite tests, it was determined that the new WD CARC coating could be applied under production conditions in varied environments and achieve similar quality results.



Implementation

Implementing new WD CARC is a simple process and requires no new paint spraying or personal protective equipment. The change is simple and the procedure has been deemed a drop-in replacement. The new WD CARC can be exchanged with the old



CARC without any new procedures or start-up costs. It is important that the mixing instructions provided by the manufacture are followed strictly, in order to obtain the same results as with the old CARC. Cost of the coating ranges depending on which vendor is used to supply the material, but it is similarly priced to the old CARC. Savings in usage,

however, can be noticed immediately, as demonstrated in Ogden, where as much as 1/3 less paint was used to complete the same job, previously done with the old CARC.

Summary

In order to realize cost savings, prevent air, water, and hazardous waste pollution and increase worker safety, an immediate switch to the new WD CARC is highly recommended for all paint shops. The product can be easily ordered by using the qualified products list (QPL) and national stock number (NSN) list which is supplied by the United States Army Research Laboratory (ARL). The list has been approved by the ARL, which is the approving authority for all of the Department of Defense regarding Chemical Agent Resistant Coatings. Excerpts from the QPL and NSN lists, as well as suggested manufacturers listings, are located on the left-hand columns of this document to assist in ordering the products.

For more information on utilizing the NEW WD CARC please visit these informative websites:

<http://www.arl.army.mil/wmr/coatings/index.html> US Army Research Laboratory Coatings Team
https://www.logsa.army.mil/pub/psissuesA/PS_621.pdf Preventative Maintenance Monthly Magazine – p 9-10
<http://www.estcp.org/projects/pollution/pp-0024.cfm> Environmental Security Technology Certification Program
<http://www.estcp.org/documents/techdocs/pp-0024.pdf> ESTCP Cost and Performance report
<http://aec.army.mil/usaec/publicaffairs/update/fall03/fall0322.html> US Army Environmental Center Update
<http://www.wood.army.mil/ENGRMAG/PDFs%20for%20Oct-Dec%2004/Longdon.pdf> Engineer, Professional bulleting for Army Engineers
<http://www.ndcee.ctc.com/> The National Defense Center for Environmental Excellence, Fall 2004 Newsletter, front page
<http://www.epa.gov/air/caaac/2004awar.html> 2004 Clean Air Excellence Awards Recipients, Water Dispersible Chemical Agent Resistant Coating, Pennsylvania Army National Guard

* Photos courtesy of US ARMY RESEARCH LABORATORY, Internet address as noted above